

Functionality

- The program should gain access to a user's Spotify profile to determine a user's listening habits through OAuth 2.0.
- The program must allow users to disconnect their Spotify account and prevent the app from creating a new playlist daily as desired.
- The program must work with the Spotify API.
- The program must be able to create new playlists for users with a title and description informing this playlist is the user's SpotDiscover playlist.
- The program must be able to fill the aforementioned playlist with 30 new songs daily, preferably with music the user enjoys and hasn't heard before.
- The program must be able to refill the playlist with a new set of 30 songs on a daily basis.
- The program may be able to add custom cover art to the playlist.

Usability

- Users must log in through an initial login screen which connects SpotDiscover accounts to their Spotify account.
- User accounts must be directly connected to Spotify credentials.
- The user interface should be simple and dark-themed with green highlights.
- Users are assumed to have basic knowledge of general web interfaces such as knowing the usual images associated with certain functionalities: (a gear for settings, three horizontal bars for a menu, etc)
- Customers must be able to change playlists daily through an "Update Daily Playlist" option.
- Through settings, users must have an option to disconnect their account.

Reliability

- The program should, upon encountering an error, generate a meaningful error message and show it to the user.
- The error messages should fall in a similar format and provide adequate information about the system's error.
- The program should reliably generate playlist information. If the program creates a playlist, it would be created on the Spotify app, not ours; the program must reliably make sure Spotify saves the appropriate information before telling the user it is finished.
- The program must run well on modern x64 Windows platforms. Reliability beyond that is neither guaranteed nor within the scope of this project.

Performance

- The speed or rate limit of the Spotify API, which is approximately 30 seconds, is what will limit the program.
 - The program should implement batch requests to improve call efficiency.
<https://developer.spotify.com/documentation/web-api/concepts/rate-limits>
- The program should not hang or lock up if it exceeds the API limit. Instead, it should wait a few seconds and try again.
 - The program will handle this by informing the user the API limit was exceeded accompanied by a buffer circle.
 - The delay can be based on a "Retry-After" value the API responds within in case the program hits the limit.

Supportability

- The program will be Open Source and, to the public, will be:
 - Accessible publicly on GitHub.

- Clonable through Git on their personal devices.
 - Forkable from the Github repository.
- The program will use Visual Studio 2022, making shared development easy for the development team with Visual Studio 2022's many sharing features.
- The program will support all Spotify user accounts accessible through the Spotify API.
- The program will change according to new releases of the Spotify API throughout its lifecycle, into the maintenance phase, and beyond.

Design

- The target hardware platforms are Windows devices, so developers will write the application in C#.
- Developers will code with average Windows device computing limits in mind.

Implementation

- The team should carefully track and update project objectives in a timely manner.
 - The team will use online project tracking software such that all members may view and update progress.

Interface

- SpotDiscover will be fairly independent and integrate with the Spotify API alone.

Physical

- The program will function on a variety of hardware. The program's developers will code on x86 Intel processors using a variety of graphical cards and other components.

- Due to being a 64-bit program created using the .NET framework on Visual Studio 2022, this application will support Windows 10 or Windows 11 environments regardless of hardware.

User Stories

1. As Dan, I want to share my playlist with my friends, so I can share my enjoyment with them.
2. As Mary, I want to keep my daily playlist, so I can keep my old recommendations.
3. As an artist, I want to see what playlists recommend when I put in my music, so I can see what my fans like about my music.
4. As Clark, I want to get new recommendations better than what regular Spotify offers, so I can find new artists without being sponsored.
5. As Ella, I want to customize my app's appearance, so I can feel the app is just for me.